

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A semiconductor chip mounting apparatus comprising:

a semiconductor chip supply unit to supply a semiconductor chip;

a mounting member carrier unit to carry a mounting member;

a semiconductor chip carrier unit to carry out mounting operations, wherein said mounting operations include picking up said semiconductor chip from said semiconductor chip supply unit, carrying said semiconductor chip to a mounting position of said mounting member, and mounting said semiconductor chip on said mounting position of said semiconductor chip carrier unit;

a sensor unit to measure first and second positions of said semiconductor chip carrier unit before and during said mounting operations, respectively, wherein said sensor unit measures said second position of said semiconductor chip carrier unit when said semiconductor chip carrier unit carries out semiconductor chip mounting operations at predetermined times;

a control unit to calculate position deviations of said first position of said semiconductor chip carrier unit from said second position of said semiconductor chip carrier unit to provide position adjustment instructions when said position deviations are greater than a predetermined value; and

~~means~~ an adjustment unit configured to adjust said second position of said semiconductor chip carrier unit in response to said position adjustment instructions of said control unit.

Claim 2 (Canceled):

Claim 3 (Currently Amended): A semiconductor chip mounting apparatus according to ~~Claim 2~~, comprising:

a semiconductor chip supply unit to supply a semiconductor chip;

a lead frame carrier unit to carry a lead frame;

a semiconductor chip carrier unit to carry out semiconductor chip mounting operation, wherein said semiconductor chip mounting operations include picking up said semiconductor chip from said semiconductor chip supply unit, carrying said semiconductor chip to a mounting position of said lead frame, and mounting said semiconductor chip on said mounting position;

a sensor unit to measure first and second positions of said semiconductor chip carrier unit before and during said mounting operation, respectively, wherein said sensor unit measures said second position of said semiconductor chip carrier unit when said semiconductor chip carrier unit carries out semiconductor chip mounting operations at predetermined times;

a control unit to calculate position deviations of said first position of said semiconductor chip carrier unit from said second position of said semiconductor chip carrier unit or provide position adjustment instructions where said position deviations are greater than a predetermined value; and

an adjustment unit configured to adjust said second position of said semiconductor chip carrier unit in response to said position adjustment instructions of said control unit.

Claim 4 (Original): A semiconductor chip mounting apparatus according to Claim 3, wherein said predetermined times are increased if said position deviations are less than said

predetermined value, or decreased if said position deviations are greater than said predetermined value.

Claim 5 (Withdrawn): A method of mounting a semiconductor chip, comprising:

- measuring a first picking-up position of a semiconductor chip carrier unit by a sensor unit before mounting operations;
- storing data of said first picking-up position measured by said sensor unit in a control unit;
- moving said semiconductor chip carrier unit to a second picking-up position;
- picking-up said semiconductor chip from a semiconductor chip supply unit at said second picking-up position by said semiconductor chip carrier unit;
- carrying said semiconductor chip picked up by said semiconductor chip carrier unit to, and mounting the same on, a mounting position of a lead frame forwarded by a lead frame carrier unit;
- measuring said second picking-up position by said sensor unit during the mounting operations;
- storing data of said second picking-up position measured by said sensor unit in said control unit;
- comparing said data of said first picking-up position with those of said second picking-up position to calculate position deviations and
- adjusting said second picking-up position of said semiconductor chip carrier unit in response to instructions of said control unit in case that said position deviations are greater than a predetermined value.

Claim 6 (Withdrawn): A method of mounting a semiconductor chip in accordance with Claim 5, wherein said measuring of said second picking-up position of said semiconductor chip carrier unit is made when said mounting operations are carried out at predetermined times.

Claim 7 (Withdrawn): A semiconductor chip mounting apparatus according to Claim 6, wherein said predetermined times are increased if said position deviations are less than said predetermined value, or decreased if said position deviations are greater than said predetermined value.

Claim 8 (Canceled):

Claim 9 (Currently Amended): A semiconductor chip mounting apparatus ~~according to Claim 8,~~ comprising:

a semiconductor carrier unit to carry a lead frame;

a semiconductor ship carrier unit to pick up said semiconductor chip from said semiconductor ship supply unit, to carry said semiconductor ship to a mounting position of said lead frame, and to mount said semiconductor ship on said mounting position;

a sensor unit to measure data of said picking up position of said semiconductor ship carrier unit and data of said mounting position of said lead frame carrier unit, wherein said sensor unit measures said picking-up position of said semiconductor chip carrier unit and said mounting position of said lead frame carrier unit when said semiconductor chip mounting operations are carried out at predetermined times;

a control unit to provide position adjustment instruction, wherein said control unit calculates picking-up position deviations of said data of said picking-up position measured by

said sensor unit before semiconductor ship mounting operations from those during said semiconductor ship mounting operations and said semiconductor ship mounting operation and said position adjustment instructions are provided when said picking-up position adjustment instruction are provided when said picking-up position deviation are greater than a predetermined value, and wherein said control unit calculates mounting position deviations of said data of said mounting position measured by said sensor unit before semiconductor ship mounting operations from those measured by said sensor unit during said semiconductor ship mounting operation and said position adjustment instructions are also provided when said mounting position deviations are greater than a predetermined value; and
an adjustment unit configured to adjust said picking-up and mounting position of said semiconductor ship carrier unit in response to said position adjustment instructions from said control unit.

Claim 10 (Withdrawn): A method of semiconductor chip mounting apparatus,
comprising:

measuring a first picking-up position of a semiconductor chip carrier unit and a first mounting position of a lead frame carrier unit by a sensor unit before mounting operations;

storing data of said first picking-up and first mounting positions in a control unit;

moving said semiconductor chip carrier unit to a picking-up position to pick up a semiconductor chip from a semiconductor chip supply unit;

carrying said semiconductor chip picked up by semiconductor chip carrier unit to a mounting position of a lead frame in said lead frame carrier unit;

mounting said semiconductor chip on said mounting position of said lead frame;

measuring a second picking-up position of said semiconductor chip carrier unit during said mounting operations;

storing data of said second picking-up position in said control unit;

comparing said data of said first picking-up position with said data of said second picking-up position;

calculating picking-up position deviations of said first picking-up position from said second picking-up position providing picking-up position adjustment instructions from said control unit when said picking-up position deviations are greater than a predetermined value;

measuring a second mounting position of said lead frame carrier unit during said mounting operations;

storing data of said second mounting position in said control unit;

comparing said data of said first mounting position with said data of said second mounting position;

calculating mounting position deviations of said first mounting position from said second mounting position adjusting said second picking-up position of said semiconductor chip carrier unit where said mounting position deviations are within said predetermined value and said picking-up position deviations are greater than said predetermined value; and

adjusting said second mounting position of said lead frame carrier unit in response to position adjustment instructions from said control unit by an amount equal to adding said picking-up position deviations to said mounting position deviations where both said mounting position deviations and said picking-up position deviations are greater than said predetermined values, respectively.

Claim 11 (Withdrawn): A method of mounting semiconductor chips according to Claim 10, wherein said measuring of said second picking-up position of said semiconductor chip carrier unit and said second mounting position of said lead frame carrier unit take place when said mounting operations are carried out at predetermined times.

Claim 12 (Currently Amended): A semiconductor chip mounting apparatus comprising:

a semiconductor chip supply unit to supply a semiconductor chip;

a lead frame carrier unit to carry a lead frame;

a semiconductor chip carrier unit to pick up said semiconductor chip from said semiconductor chip supply unit, to carry said semiconductor chip to a mounting position of said lead frame, and to mount said semiconductor chip on said mounting position;

a sensor unit to measure data of a first position of said semiconductor chip carrier unit before mounting operations and those of a second position of said semiconductor chip carrier unit during said mounting operations, respectively, wherein said sensor unit measures said second position of said semiconductor chip carrier unit when said semiconductor chip carrier unit carries out semiconductor chip mounting operations at predetermined times;

a control unit to provide position adjustment instructions, wherein said control unit calculates position deviations of said first position of said semiconductor chip carrier unit from said second position of said semiconductor chip carrier unit and said position adjustment instructions are directed to either a position of said semiconductor chip supply unit or that of said semiconductor chip carrier unit when said position deviations are greater than a predetermined value; and

~~means~~ an adjustment unit configured to return said semiconductor chip supply unit to a first semiconductor supply position or said semiconductor chip carrier unit to said first picking-up position in response to said position adjustment instructions from said control unit.